



INTERNATIONAL PARTNERSHIP FOR HYDROGEN AND FUEL CELLS IN THE ECONOMY

IPHE Country Update April 2022: Germany

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1. New Initiatives, Programs, and Policies on Hydrogen and Fuel Cells

At the end of 2021, a new federal government was elected, which shifted the responsibility for climate policy (with European and international references) from the environment ministry mainly to the energy ministry so that energy and climate are basically concentrated in a single responsibility (exception: the Federal Foreign Office is responsible for international climate policy as such). The incoming German coalition government pledged to double the 2030 electrolyser deployment target from 5 to 10 gigawatt. It also stated in its 2021 coalition treaty (translation from German by NOW GmbH / BMDV):

- “The hydrogen strategy will be updated in 2022. [...] For a rapid market ramp-up and until a low-cost supply of green hydrogen is available, we are relying on a technology-open design of hydrogen regulation”.
- “In the interest of a rapid market ramp-up, we promote future-proof technologies, even if the availability of green hydrogen is not yet sufficiently secured. We do not want to limit the use of hydrogen to specific fields of application”.
- “We want to drive forward the development of an effective hydrogen economy [...] as quickly as possible and achieve an electrolysis capacity of around 10 gigawatts in 2030. We will ensure this [among other things,] through European and international energy partnerships”.

As part of Germany's Membership in the Clean Hydrogen Mission, it is planned to launch the Hydrogen Valley Working Group together with the European Commission in 2022; the goal of the Mission is to deliver 100 Hydrogen Valleys by 2030.

2. Hydrogen and Fuel Cell R&D Update

No Updates.

3. Demonstration, Deployments, and Workforce Developments Update

Hylane GmbH (hylane), provider of climate-friendly mobility, [presented itself to the public](#) in early April 2022. Hylane places environmental protection at the centre of its exclusively climate-friendly vehicle rental services. The company offers hydrogen trucks with different superstructures and installations. Vans and buses will follow at a later date. NOW GmbH advised and accompanied the start-up during the founding phase.

In late March 2022, Germany's largest energy group E.ON (EONGn.DE) [signed a memorandum of understanding](#) with the green power arm of Australian miner Fortescue Metals (FMG.AX) to explore shipping green hydrogen to Europe. The agreement with Fortescue Future Industries (FFI) will look at ways to ship up to 5 million tonnes of hydrogen generated from renewables to Europe per year by 2030.



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The [HyGATE](#) (German-Australian Hydrogen Innovation and Technology Incubator) initiative – led by the German Federal Ministry of Education and Research – aims to establish a German-Australian supply chain for green hydrogen. HyGATE will fund innovative real-world pilot, trial and demonstration projects. The first funding round opened in March 2022.

In February 2022, the states of Berlin and Brandenburg and the Niederbarnimer Eisenbahn (NEB – Niederbarnim Railway Company) have concluded negotiations on the [research contract for the Heidekrautbahn](#). Particularly noteworthy: For the first time, hydrogen-powered trains will be used in the region around the German capital city. The project will receive a total of 25 million euros in funding from the German Federal Ministry of Digital and Transport, which will be allocated among three project sponsors.

4. Events and Solicitations

In March 2022, the German Federal Ministry for Economic Affairs and Climate Action presented the latest developments of the H2Global Initiative at a virtual IPHE Webinar. The new [H2Global Foundation](#) is being set up with €900 million that is available to support the initial build-up of large-scale green hydrogen production sites and the export of H2 to Germany (and Europe) by compensating the difference between hydrogen supply cost and the highest bidding price on the demand side.

5. Investments: Government and Collaborative Hydrogen and Fuel Cell Funding

NOW GmbH's call for public refuelling stations for commercial vehicles with a total budget of €60 million (approx. \$65 million USD) ran until the end of January 2022 and is currently being assessed (as of March 2022). Another call is planned for the middle of 2022. A project funding call for German-Chinese R&D projects closed at the end of 2021 and is currently in the assessment phase, too.

In December 2021, the European Commission [approved](#), under EU State aid rules, the €900 million German H2Global scheme to support investments in the production of renewable hydrogen in non-EU countries, which will be then imported and sold in the EU.

6. Regulations, Codes & Standards, and Safety Update

A [new website](#) with information on fuel cell and hydrogen RCS topics has been launched.

In March 2022, NOW GmbH published an [authorization guide for hydrogen refuelling stations](#). It was published in cooperation with relevant authorities and industry partners. At the core of the brochure is the authorization guide according to approval procedure § 18 BetrSichV (Industrial Safety Regulation). It summarises in-depth information as well as best practice experiences. In addition, the guide contains checklists of standard documents and certificates, information about relevant actors as well as the authorization process as sample diagram. The publication is not a set of rules but is intended to support approval procedures for hydrogen refuelling stations and provide orientation.



Summary Country Update April 2022: Germany

Transportation	Target Number	Current Status	Partnerships, Strategic Approach	Support Mechanism
Fuel Cell Vehicles ¹		1528 (March 2022)		Subsidy for purchase for fleets (NIP II 3rd Call) incl. construction of refuelling infrastructure.
FC Bus		70 (March 2022)	Joint procurement in Europe, funded by JIVE, FCH-JU and NIP I and II	Subsidy for purchase (NIP II call 2018) incl. construction/installation of refuelling infrastructure. New funding guideline for deployment awaiting notification.
Fuel Cell Trucks ²		20 (March 2022)		R&D activities of NIP. New funding guideline for deployment awaiting notification.
Forklifts		128 (March 2022) plus 167 approved for funding (some of them currently starting into operation)	Industry Network Clean Intralogistics Net (CIN)	NIP market activation, additional procurement call.

¹ Includes Fuel Cell Electric Vehicles with Range Extenders

² As above



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H ₂ Refueling Stations	Target Number	Current Status	Partnerships, Strategic Approach	Support Mechanism
70 MPa On-Site Production	No target	n.a.		
70 MPa Delivered	100 by 2020 (basic network)	93 (March 2022) plus 14 in planning or under construction	H2 Mobility, others	Subsidy for construction/ installation for publicly accessible stations for road transport.
35 MPa On-Site Production	No target	n.a.		
35 MPa Delivered	400 by 2025 (depending on vehicle roll-out) 1000 by 2030 (depending on vehicle roll out)	10 plus 9 in planning or under construction	H2 Mobility, others	Subsidy for construction/ installation for publicly accessible stations for road transport.
Stationary	Target Number ³	Current Status	Partnerships, Strategic Approach	Support Mechanism
Small ⁴	No target	19,105 units approved for funding (2016		KfW programme 433 of the Federal Ministry for Economic Affairs and Climate Action (BMWK), a

³ Targets can be units installed and/or total installed capacity in the size range indicated

⁴ <5 kW (e.g., Residential Use)



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		through December 2021)		combination of fix rate and capacity-related subsidies.
Medium ⁵	No target	n.a.		
Large ⁶	No target	n.a.		
District Grid ⁷	No target	n.a.		
Regional Grid ⁸	No target	n.a.		
Telecom backup	No target	700 in operation (558 additionally approved for funding)		Subsidy for procurement (NIP II call).
H₂ Production	Target⁹	Current Status	Partnerships, Strategic Approach	Support Mechanism
Fossil Fuels ¹⁰				
Water Electrolysis ¹¹ (PEM, Alkaline, SOEC)	10 GW by 2030. (pledged by new government)	78 MWel plus >2 GWel planned or		Various support schemes.

⁵ 5kW – 400 kW (e.g., Distributed Residential Use)

⁶ 0.3MW – 10 MW (e.g., Industrial Use)

⁷ 1MW – 30 MW (e.g., Grid Stability, Ancillary Services)

⁸ 30MW plus (e.g., Grid Storage and Systems Management)

⁹ Target can be by quantity (Nm³, kg, t) and by percentage of total production; also, reference to efficiency capabilities can be a target

¹⁰ Hydrogen produced by reforming processes

¹¹ Please indicate if targets relate to a specific technology (PEM, Alkaline, SOEC)



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		proposed as part of IPCEI		
By-product H ₂				
Energy Storage from Renewables	Target¹²	Current Status	Partnership, Strategic Approach	Support Mechanism
Installed Electrolyser Capacity	As above	As above		As above
Power to Power ¹³ Capacity	No target			
Power to Gas ¹⁴ Capacity	No target			

¹² Can be expressed in MW of Installed Capacity to use the electricity from renewable energy generation, and Annual MWh of stored energy capacity

¹³ Operator has an obligation to return the electricity stored through the use of hydrogen back to electricity

¹⁴ Operator has the opportunity to provide the stored energy in the form of hydrogen back to the energy system through multiple channels (e.g., merchant product, enriched natural gas, synthetic methane for transportation, heating, electricity)